

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) ~~Method~~ A method for the determination of characteristic layer parameter by irradiation of light on to a layer structure, determination of the temperature of the layer by means of at least one emissivity-corrected pyrometer, spectral-optical measurement of the reflected light, determination of the characteristic layer parameters,

~~characterised in~~

~~that~~ wherein the wobbling and/or rotating of the sample to be measured is compensated

and/or

that the pyrometer optical path and the optical path of the spectral-optical system are guided separately of each other

and/or

that a separation of the radiation signal for the temperature measurement and the radiation signal for the spectral-optical measurement is implemented by blanking of the irradiated light.

2. (Currently Amended) ~~Method~~ The method according to claim 1,
~~characterised in~~
~~that~~ wherein the compensation of the wobbling and/or the rotating of the sample to be measured is implemented by a spherical mirror, where the sample is located in the centre of the curvature of the spherical mirror.

3. (Currently Amended) ~~Method~~ The method according to claim 1,
~~characterised in~~
~~that~~ wherein the compensation of the wobbling and/or the
rotating of the sample to be measured is implemented by a lens, a
beam splitter and an aperture.

4. (Currently Amended) ~~Method~~ The method according to claim 1,
~~characterised in,~~
~~that~~ wherein a separation of the radiation signal for the
temperature measurement and the radiation signal for the spectral-
optical measurement is implemented by synchronised blanking of the
irradiated light.

5. (Currently Amended) ~~Method~~ The method according to claim 1,
~~characterised in,~~
~~that~~ wherein the blanking is implemented by means of a
shutter.

6. (Currently Amended) ~~Method~~ The method according to ~~at least~~
~~one of the claims 1, 5 or 6~~ claim 1,
~~characterised in,~~

~~that wherein~~ the synchronisation of the blanking takes place with respect to the rotation of a sample mounted on the sample carrier.

7. (Currently Amended) ~~Method~~ The method according to ~~at least one of the claims 1 to 6~~ claim 1,

~~characterised in,~~

~~that wherein~~ additionally a measurement of the radial temperature profile of the sample carrier takes place.

8. (Currently Amended) ~~Method~~ The method according to ~~at least one of the claims 1 to 7~~ claim 1,

~~characterised in,~~

~~that wherein~~ a separation of the pyrometer optical path and the optical path of the spectral-optical system is caused by a beam dividing polarizing prism in case of reflectance anisotropy spectroscopy.

9. (Currently Amended) ~~Method~~ The method according to claim 1,

~~characterised in,~~

~~that wherein~~ the pyrometer optical path is separated from the optical path of the spectral-optical measurement, where the angle of detection of the pyrometer with respect to the sample perpendicular is identically equal to the angle of incidence of

the spectral-optical measurement with respect to the sample perpendicular .

10. (Currently Amended) ~~Method~~ The method according to at least one of the claims 1 to 9 claim 1,

~~characterised in,~~

~~that wherein~~ the calculation of the effective emissivity $\langle \epsilon \rangle$ of a sample is carried out according to the formula

$$\langle \epsilon \rangle = (1 - R_P) * (1 + R_{ATS} * R_P) = \epsilon_P * (1 + R_{ATS} * R_P)$$

where R_P is the reflectance of the sample, R_{ATS} the reflectance of the anti-wobbling-mirror and ϵ_P the emissivity of an absorbing sample without anti-wobbling-optics.

11. (Currently Amended) ~~Method~~ The method according to at least one of the claims 1 to 9 claim 1,

~~characterised in,~~

~~that wherein~~ the calculation of the effective emissivity $\langle \epsilon \rangle$ of a transparent sample and transmissive measurement is carried out according to the formula:

$$\langle \epsilon \rangle = \epsilon_{PT} * T_P * (1 + R_{ATS} * R_P + R_{ATS} * T_P^2 * R_{PT})$$

where T_P is the transmission coefficient of the sample, R_P is the reflectance of the sample, R_{ATS} the reflectance of the anti-

wobbling-mirror, R_{PT} the reflectance of the sample holder and ϵ_{PT} the emissivity of the sample carrier .

12. (Currently Amended) ~~Method~~ The method according to at least one of the claims 1 to 9 claim 1,
~~characterised in,~~
that wherein the spectral-optical measurement is carried out using only one wavelength.

13. (Currently Amended) ~~Apparatus~~ An apparatus for the determination of characteristic layer parameters comprising a spectral-optical system, at least one emissivity-corrected pyrometer and analysis means ,

~~characterised by~~ comprising
means for compensation of the wobbling and/or the rotating of the sample
and/or
means for blanking of the irradiated light.

14. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 13,

~~characterised in,~~

~~that wherein~~ the means for the blanking of the irradiated light is a shutter.

15. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 13 ~~or 14~~,

~~characterised in,~~

~~that wherein~~ the means for the compensation of the wobbling and/or the rotating of the sample comprise a spherical mirror, where the sample is located in the centre of the curvature of the spherical mirror.

16. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 13 ~~or 14~~,

~~characterised in,~~

~~that wherein~~ the means for the compensation of the wobbling and/or the rotating of the sample comprises a lens, a beam splitter and an aperture.

17. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~at least one of the claims 13 to 16~~ claim 13,

~~characterised in,~~

~~that wherein~~ the apparatus comprises several pyrometers arranged in different distances to the centre of a rotatable sample carrier.

18. (Currently Amended) ~~Apparatus~~ The apparatus according to
~~at least one of the claims 13 to 17~~ claim 13,

~~characterised in,~~

~~that~~ wherein the apparatus additionally comprises at least
one beam splitter and/or at least one beam dividing polarizing
prism.